CALIFORNIA RESOURCES AGENCY
COASTAL IMPACT ASSISTANCE PROGRAM
PROJECT PROPOSAL FORM

Department:	**Department of Parks and Recreation, Silverado District**
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Title of project:	**Adobe Creek Watershed Management Plan**
Project location:	**Sonoma County - Adobe Creek watershed; Petaluma Adobe State Historic Park, tributary to the Petaluma River**
Total cost:	**$25,000**
Funding request:	**$25,000**

MISSION

To ensure comprehensive and coordinated management, conservation and enhancement of California's ocean and coastal resources for their intrinsic value and for the benefit of current and future generations.

GOALS: Four goals have been established by the State of California to achieve this mission.

Goal 1: Stewardship. To assess, conserve, and manage California's ocean and coastal resources and the ecosystem that supports those resources.

Goal 2: Economic Sustainability. To encourage environmentally sound, sustainable, and economically beneficial ocean and coastal resource development activities.

Goal 3: Research, Education and Technology. To advance research, educational programs, and technology developments to meet future needs and uses of coastal and ocean resources.

Goal 4: Jurisdiction and Ownership. To maximize California's interests in coastal watersheds, State Tidelands, the Territorial Sea, and the Exclusive Economic Zone.

Project Summary:

The proposed project is to prepare a comprehensive watershed management plan for the Adobe Creek sub-watershed of the Petaluma River (flows to San Pablo Bay) within the Petaluma Adobe State Historic Park. The plan will develop strategies and actions to control surface runoff and sedimentation into the stream and prevent contamination of water quality from possible bacterial sources. These natural processes are believed to be accelerated by disturbances caused by past land management practices prior to park acquisition, including extensive agriculture resulting in significant degradation of the riparian corridor. Accelerated sedimentation from eroding soils continues to aggravate stream bank instability, causing additional erosion and sedimentation. Significant fisheries habitat for threatened and endangered anadromous salmonids has been degraded or lost.

1. Water Quality

Possible sources of water-quality degradation include erosion, runoff, septic systems, yard waste, oil and grease, and agricultural fertilizers and pesticides. Basic biological, chemical, and physical properties of streams are important indicators of stream health and are crucial factors in determining the types and numbers of animal and plant species that can survive within the wetted portion of the stream.

When funding is secured, we will expand the monitoring program by assessing water quality at selected sites on Adobe Creek. This monitoring will help us understand how water-quality parameters change from year to year in different portions of the stream and will help to determine source locations and magnitude of contributions. Trained volunteers will carry out much of the monitoring work. Sonoma Ecology Center staff will develop quality assurance and training procedures with review by qualified professionals and CDFG approval. Monitoring will be conducted with emphasis on water chemistry.

Volunteers will assess and analyze factors limiting steelhead and will be trained to use standard water-quality testing kits following the protocols developed by the EPA in Volunteer Stream Monitoring: A Methods Manual. Water-quality monitoring will examine factors including but not limited to temperature, dissolved oxygen (DO), conductivity, and pH. Sampling will be conducted in three teams, for which separate testing kits will be purchased. For DO and pH, CHEMets or similar water-test kits will be used for field determinations using vacuum-sealed ampoules that hold testing reagents. The kits are easy to train volunteers to use, with changes in the ampoule liquids compared to color charts to assess concentration. For conductivity, ORION or similar hand-held meters will be purchased, one for each kit. The meters are specially designed for conductivity analysis in the field, with the durability and ease of reading necessary for teams of volunteers. Temperature will continue to be evaluated with stainless-steel thermometers already in use by the volunteers. Results of water-quality testing will be used to draw conclusions about the specific parameters as they relate to stream health.

For this task, monitors will be trained for collection of data for two seasons under this grant, with the expectation of continuing the program indefinitely. To train volunteers to work in both water-quality arenas, at least four training workshops will be held. The training will result in a group of approximately 30 knowledgeable, concerned citizens who can gather valuable data to assist the SEC in assessing watershed health. This group will be divided into three teams for

BMI sampling and six teams for water-quality sampling. Interpretation of the biological, physical, and chemical information from water-quality monitoring will help to identify limiting factors for the steelhead population, pinpoint sites for further monitoring, and provide a blueprint for ecological restoration in the watershed.

Work Products for Water Quality

- Two or more trainings, approximately 30 trained volunteers
- Report of two years of water chemistry monitoring as performed by volunteers

For each report listed above, summary of methods and data sources used, discussion of results, and references.

2. Excessive Sediment Yield

The natural process of soil erosion can be accelerated by human activities. According to the NRCS, natural soil erosion rates in watersheds similar to Adobe Creek watershed, estimated at 1 to 4 tons per acre per year, can more than double through land uses. Sheet and rill erosion, which remove an approximately even layer of soil over large areas, can account for the erosion of up to 10 tons of soil per acre without significant visual effect and more than 20 tons when gullies and rills form. Streambank erosion, caused by stream flows out of equilibrium with their channels, can account for 300 tons or more of soil loss per acre per year. Mass wasting, such as landslides and soil creep, although not quantified here, account for large amounts of sediment loss in certain areas in the Adobe Creek watershed. When soil losses result in increased delivery of sediment to the stream, as is common in the rainy season, suspended sediment concentrations and stream sediment bedloads can increase. Our approach to sediment yield issues in Adobe Creek will be two fold, as outlined below.

Task 2a. Analysis of Hillslope Sediment Production and Land-Use Relationships

Using GIS and field-collected hydrologic data, SEC will assess hillslope sediment production and characterize erosion rates in the Adobe Creek watershed. The GIS model will incorporate factors of the MUSLE (modified universal soil loss equation), including slope, upslope catchment area, vegetation, soil type, and bedrock geology. These factors are weighted and combined to predict the level of sediment production across the landscape. The predicted sediment production will be calculated in 10-meter cells, and aggregated over subwatersheds. The resulting maps will indicate areas most prone to sediment production based on physical and biological landscape features.

Volunteers will collect hydrologic data to quantify actual sediment levels, flow rates and other key information (as described below in Task 2b). These sediment data will be compared to predicted values for sediment production from the GIS model. The analysis will focus on separating baseline sediment levels from current sediment levels. The results should depict where sediment production is higher than a predicted baseline erosion rate.

Sediment levels will be measured, so the results can be tracked over time and long-term trends can be established. SEC will also evaluate the range of effects from different land uses on sediment levels by comparing subwatersheds. In the next three months, we will have completed a parcel-level land use coverage for the entire watershed. This fine-scale data

provides an opportunity to create an index of land use types, roads, and other sources of sediment production. Sediment field measurements will be compared among subwatersheds to test correlations with the land use impacts. If correlations can be found, the results will be used to calibrate the GIS sediment production models, so they can be applied across the watershed with a known uncertainty. Future field work in other subwatersheds can be used to refine the models.

The overall questions addressed by this analysis include: How much sediment is being produced and where? How much of this sediment is from natural causes vs. human impacts? Where are the most erosion-sensitive areas? What is the relationship between roads, land use, and sediment in our watershed?

Currently, no comprehensive program exists for assessing turbidity and sediment loadings in Adobe Creek. Methods to assess sedimentation include measuring rainfall, flow, total suspended sediment (TSS) and/or turbidity and correlating among the parameters. We will expand our volunteer program with a coordinated data collection program for TSS and/or turbidity in Adobe Creek using the best available methods. Sampling sites will be chosen on the basis of testing the hypothesis that land cover changes and management practices cause significant increases in peak flow runoff and sediment input to streams. Samples will be collected according to the U.S. Department of Agriculture protocols and in consultation with RWQCB volunteer monitoring specialists. Samples will be analyzed by qualified staff in SEC's SVWS laboratory following EPA protocols and a QAPP approved by the RWQCB, with pro bono assistance where needed from certified laboratory.

Monitors will be trained for collection of data for two seasons under this grant, with the expectation of continuing the program, as additional funds become available. Volunteers will be trained at four workshops previously described for Task 1. Interpretation of the data relating to excessive sediment yield will help to provide information to the community regarding human-induced sedimentation, identify turbidity-related limiting factors for steelhead, pinpoint sites for continued monitoring, and identify restoration sites in the watershed.

Work products for Sedimentation:

- Four training workshops, 4-10 trained volunteers
- Report of two years of TSS or turbidity monitoring as performed by volunteers
- Maps of parameters used in the model and model outputs, classifying subwatersheds for their erosion potential
- Map of restoration opportunities/priorities for sediment by subwatershed

For each report listed above, summary of methods and data sources used, discussion of results, and references.

3. Education Coordination for Watershed Studies – Adopt-A-Watershed

Adopt-A-Watershed is a community-based non-profit that assists educators in implementing the Adopt-A-Watershed curriculum, an award-winning, sequential K-12 science curriculum that emphasizes hands-on activities in the local watershed. Students learn to understand the long-term changes in their environment by participating in projects, which use the same sites each year. The students' participation in restoration projects and community actions teach students

the value of their local environment. AAW will expand environmental education efforts in elementary schools and launch the "Fish in Schools" program district-wide. In expanding the elementary school program, we will introduce and discuss fish, streams, habitat, bugs and eventually the entire watershed, to ensure students understand concepts that are requisite to studying fish in great detail in fifth grade. We will provide training, in-class support, field trip assistance, curricula and essential lab materials so that the elementary schools can teach focused, sequential science and prepare students to participate in the "Fish in Schools" program.

4. Public Relations and Planning

All Stakeholders will be invited to attend public meetings where objectives of watershed plan and concerns will be addressed. DPR will make consistent and continuous efforts to involve stakeholders in the watershed plan process.

Consistency with Mission and Goals of CIAP:

Petaluma Adobe State Historic Park is situated approximately midway along Adobe Creek, a tributary to the Petaluma River. Adobe Creek has gained attention in recent years due to its recognized importance and value to anadromous steelhead populations. Through other grant funding sources, such as 319h (RWQCB) the department has accomplished meaningful water quality improvements in the State Park by addressing the highest priority projects. These individual projects, though effective in restoring much of the stream riparian corridor, improving fish passage, spawning beds and fish rearing habitat, and reducing sediment-source contributions in the subwatershed, are not tied to an overall comprehensive conservation plan.

The scope of future work will be improved by a watershed management plan prepared in collaboration with other stakeholders. The proposed project will complement the previous efforts by assessing and planning more detailed and comprehensive corrective measures within the subwatershed context, which will lead to the accomplishment of coastal resource management goals for this park unit. Without a comprehensive planning effort for this subwatershed, an important component of watershed restoration will be missing from the overall watershed health. The region will continue to suffer from degraded coastal resources and low value habitat for anadromous fisheries.

This proposed project conforms with statewide policies and initiatives addressing coastal resource management and watershed protection and restoration goals. The proposed project involves multiple agencies and watershed stakeholders in planning and decision-making. Some of these cooperating agencies are; California Department of Fish and Game (Bill Cox), State Water Resources Control Board, San Francisco Bay Regional Water Quality Control Board (RWQCB) (Carmen Fewless), Southern Sonoma County Resource Conservation District (David Luther), United Anglers, and Casa Grande High School (Tom Furr). The initiatives of these stakeholders facilitate local, collaborative planning efforts to accomplish coastal resource and water quality goals by encouraging participation in ways that look to solutions of mutual benefit to those affected by watershed management decisions.

The department will continue to plan for watershed improvements in its park units through forming partnerships and alliances, and by encouraging volunteer support and citizen involvement including an educational component. An element of the education component will involve the K-12 Adopt a Watershed Program conducted through local schools and supported by the proposed project proponents and collaborators. Adopt a Watershed is an increasingly popular and now well-established program in California that uses a local watershed as the focal point of a science curriculum.

Adopt a Watershed promotes stewardship toward the land through classroom activities, field studies, restoration projects, professional speakers and community outreach programs. Through these activities, students are provided with skills to make educated, informed decisions regarding wise resource management.

A now famous project, conducted in the 80's, involved the efforts of students and teachers at Casa Grande High School in Petaluma. The Adobe Creek Restoration Project, organized by the United Anglers, removed trash and restored reaches of Adobe Creek by planting willows and other trees. Students were responsible for a decision to abandon and remove an old dam and reservoir that restored Adobe Creek to a free-flowing stream. In addition, students planned and constructed a fish hatchery and visitor center to rear and release steelhead, which has since been enlarged and improved as a Chinook salmon facility. These valuable educational opportunities and linkages to coastal ecosystem resources would be maintained and further developed through this project.

In addition, Petaluma Adobe State Historic Park contains significant archeological resources that are actively being lost to streambank failures. Assessment of causal factors to this process will be essential to reduction of cultural resource impacts.

Schedule of Work:

Many of the activities proposed in this application operate on an ongoing schedule or have schedules dependent on our collaborators. The table below outlines the schedule for those tasks that are constrained by season.

Year	Spring	Summer	Fall	Winter
2001			Contract signed (assumed)	AAW
2002	WQ sampling, AAW	PR Planning	WQ sampling, AAW	peak flow sampling, TSS sampling, AAW
2003	WQ sampling, AAW	PR Planning	WQ sampling, AAW	peak flow sampling, TSS sampling,

				AAW.
2004	WQ sampling, AAW	PR Planning	Final reporting	

Cost Estimate and Budget:

Nearly all work included in this proposal would be contracted out to partners in this project. Three years of project oversight and administration would be conducted by DPR, but all technical work would be undertaken by experienced experts in this field.

Upon award of a grant, a detailed cost breakdown and timeline would be requested of contractors.

2001: AAW: $5,000
2002: All water sampling, AAW: $5,000
2003: All water sampling, AAW: $5,000
2004: Final sampling and reporting: $5,000
DPR retained funds for project oversight, administration, public outreach planning and coordination: $5,000

Total Project Budget: $25,000

CALIFORNIA RESOURCES AGENCY
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Department:	**Department of Parks and Recreation**
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Title of project:	**Espa Lagoon and Watershed Analysis**
Project location:	**Humboldt County - Near Gold Bluffs Beach** **Prairie Creek State Park,** **North Coast Redwoods District**
Total cost:	**$82,500**
Funding request:	**$75,000**

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Project Summary:

Espa Lagoon, part of a salmonid bearing stream system, has been impacted by sedimentation and attendant eutrophication related to past logging and mining in its upper watershed. Inhibition of tidal mixing due to barriers (road and berm) at the downstream end of the lagoon, beach progradation due to littoral drift exacerbated by upcoast land use, nearby dune stabilization related to colonization by European beach grass and abnormally high amounts of large wood at the Espa Creek-ocean interface have disrupted the dynamic processes inherent to this coastal ecosystem. In addition this coastal lagoon has been a significant Native American occupation site.

This project will analyze the upper watershed to identify and prioritize treatment of potential sediment sources through GIS and air photo analysis and field reconnaissance; measure the potential for tidal mixing and water flux through salinity measurement and staff plate measurement upstream and downstream from the barriers below the lagoon; determine the hydrologic impacts of barrier removal through stream profile and cross section analysis; assess and test the best methods for controlling exotic plants and managing the large wood that affect the lagoon and dune system; measure the fish populations and other water quality parameters relevant to their health (dissolved oxygen, temperature, pH); evaluate the long term trends in beach progradation via air photo analysis and historical review; identify any potential impacts from nearby park development (a nearby residence and diesel fueled generator) and assess what impacts ground disturbance or restoration might have on nearby Native American sites. These parameters require analysis so that the restoration strategies have focused, well-thought out, integrated and effective goals for implementation.

In addition, unsuccessful tsunami core studies have occurred in this vicinity in the past (unsuccessful because of thick anthropogenic sediments, which either inhibited reaching or disturbed potential tsunamigenic strata). Further opportunities for alternative exploration sites will also be assessed as part of this project.

Once these parameters have been defined and a plan of action developed other agencies interested in water quality and fish health can assist with funding for implementation. For example, the California Department of Fish and Game has a program for the restoration of coastal watersheds (SB 271). The State Regional Water Quality Control Board also administers a program related to water quality improvement. Information obtained from this project would be used to submit such a proposal.

Consistency with Mission and Goals:

The purpose of this project is to develop a comprehensive and coordinated implementation strategy for coastal ecosystem restoration. The project is within a state park with very low potential for development within the subject watershed. Therefore there is a high potential that the restoration work would be preserved for future generations, consistent with the mission of the CIAP program.

This project also meets at least three of the stated goals to achieve the mission: 1) stewardship – the goal of this project is the assessment of a coastal lagoon, its watershed and the beach interface with the goal of their restoration to a naturally functioning ecosystem, 2) economic sustainability – the road barrier assessment at the downstream end of the lagoon will involve determination of the viability of upgrading a culvert to a flatcar bridge, which should have enhanced economic and environmental sustainability. Furthermore, alternative energy systems are being explored by State Parks and Humboldt State University to a diesel fueled generator that currently serves a park residence near the lagoon, 3) research and education – study of the Native American culture at Espa lagoon may have implications for other coastal projects near native American sites on the north coast of California through determination of linkages between sites. Potential opportunities for further tsunamigenic study will also be assessed (Vaughan has obtained grant funding for paleoseismic work [National Earthquake Hazard Reduction Program] in the past).

Timeline (arbitrarily use July 1 as project start date):

A. GIS/air photo analysis (Vaughan - State Park geologist/ National Park GIS staff) – 7/1 to 9/30 year 1
B. Field reconnaissance in upper watershed and GIS integration (State Park geology staff) – 9/30 to 12/31 year 1
C. Water quality and water level measurement (National Park hydrology staff) - 7/1 to 6/30 year 1
D. Stream cross section development and analysis (National Park hydrologist/staff) – 9/30 to 10/31 year 1
E. Fish monitoring (National Park fish biologist/staff) – 7/1 to 6/30 year 1
F. Exotic plant and large wood management (pilot program – CCC's/State Park ecology staff) – 7/1 to 8/30 year 1
G. Assessments of park impacts and potential tsunamigenic sites (Vaughan [geologist]) – 4/1 to 4/15 year 1
H. Native American study (contract – Humboldt State University) – 7/1 to 12/31 year 1
I. Plan integration and report writing (Vaughan) - 7/1 to 9/30 in year 2

Cost estimate:

A. GIS/air photo = $7,500
B. Field reconnaissance = $11,500
C. Water quality = $10,000
D. Stream cross sections = $7,500
E. Fish monitoring = $7,500
F. Exotic plant program = $10,000
G. Park impact/tsunami assessment = $750
H. Native American study = $7,500
I. Report and project management = $7,500
J. Overhead @ 20% on A. through H., inclusive = $12,500

Total = $82,500 ($75,000 from CIAP and $7,500 from State Parks – see budget)

Estimated budget:

			Amount Requested	Amount of Cost Share	Project Total
PERSONNEL COSTS					
Level of Staff	Hours	Rate			
Eng. Geologist (CSP)	172	$40.00	$ 750.00	$ 6,140.00	$ 6,890.00
Ecologist (CSP)	40	34.00	0.00	1,360.00	1,360.00
Physical science Technicians (NPS)	1341	13.50	18,100.00	0.00	18,100.00
Environmental Services Interns (CSP)	852	13.50	11,500.00	0.00	11,500.00
NPS GIS specialist	200	24.00	2,400.00	0.00	2,400.00
NPS biologist	100	27.50	2,750.00	0.00	2,750.00
NPS hydrologist	200	27.50	5,500.00	0.00	5,500.00
CCC's (contract)			8,000.00	0.00	8,000.00
Water quality/volume instruments			3,000.00	0.00	3,000.00
Water quality lab (contract)			3,000.00	0.00	3,000.00
Cultural study (contract)			7,500.00	0.00	7,500.00
Overhead at 20% (requested amounts)			12,500.00	0.00	12,500.00
TOTAL COSTS			$75,000.00	$7,500.00	$82,500.00

NPS = National Park Service
CSP = California State Parks
CCC = California Conservation Corps

CALIFORNIA RESOURCES AGENCY
COASTAL IMPACT ASSISTANCE PROGRAM
PROJECT PROPOSAL FORM

Department: California Resources Agency
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Title of project: For the Sake of the Salmon Regional Watershed Coordinators
Project location: Coast of Central and Northern California
Total cost: $180,000
Funding request: $180,000

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Background:
In late 2000, ***For the Sake of the Salmon*** (FSOS) contracted with the California Resources Agency for $225,000 to assist California coastal watershed groups for a one-year period (through December 1, 2001). With these funds, FSOS is contracting for three Regional Watershed Coordinators to provide direct technical assistance to local watershed groups in three coastal regions of California (North Coast, Central Coast, and South Central Coast). This assistance focuses on organizational development and referrals to salmon and watershed information resources and specialists. The top priority for each Regional Coordinator is to help watershed groups develop technically sound, well-written proposals to fund watershed assessment, planning and restoration projects. Regional Coordinators are organizing funding workshops, networking forums, and capacity building activities in coastal areas.

The Regional Watershed Coordinators, which work on an average of 20-25 hours per week, commenced work on December 1, 2000. FSOS has received very positive feedback from watershed groups regarding the Coordinator's services. To continue the California Regional Watershed Coordinator program into 2002 and beyond, FSOS is currently pursuing additional funding to supplement any renewed funding through the California Resources Agency. Accordingly, FSOS is preparing a grant application for $100,000 to $125,000 to the National Fish and Wildlife Foundation's (NFWF) Pacific Salmon Grassroots Initiative program. Initial discussions with NFWF officials in San Francisco have generated a very positive response.

Project Summary:
By adding the above mentioned level of NFWF funding to a second year of funding (i.e., CIAP) from the California Resources Agency in the amount of $180,000 to $225,000, two primary options for sustaining and expanding the California Regional Watershed Coordinator program emerge:

1. Scores of watershed groups exist in Southern California that could benefit from the Regional Watershed Coordinator program. The combination of renewed California Resource Agency support and NFWF funds would allow the program to add a South Coast Regional Coordinator.
2. Demand for the current program has already exceeded “supply” in the sense that the Coordinators are only available 20-25 hours per week. Combined NFWF and Resources Agency funding would facilitate expansion of the program to approximately 30 hours per week for the three existing positions.

Some combination of the above options is also possible. Irrespective of the final structure of any expanded program, renewed support from California Resources Agency, leveraged by a NFWF grant, would provide for early assurance that the current Regional Watershed Coordinator program would have the multi-year continuity essential to retaining qualified Coordinators and to delivering consistent services to watershed groups.

Consistency with Mission and Goals:

Mission: On going support for three FSOS Regional Watershed Coordinators is consistent with the mission of Coastal Impact Assistance Program in that in order to have coordinated and consistent watershed management in Northern and Central Coastal California, technical assistance to local watershed groups must be readily available. As stated above, we plan to do this by providing CIAP funds to FSOS so that it can continue to contract for three Regional Watershed Coordinators.

Goal 1 Stewardship: This proposal addresses stewardship of ocean and coastal resources by providing assistance to local watershed groups in developing technically sound, well-written funding proposals for watershed assessment, planning and restoration projects.

Goal 2 Economic Sustainability: The document California's Ocean Resources: An Agenda for the Future states that ocean dependent industries contributed $17 billion to the state economy in 1992, creating over 370,000 jobs that year. That economy is largely based on the existence of clean coastal waters for sustainable fisheries, swimming, healthy marine resources, and the existence of beaches that are safe from erosion. Watershed assessment, planning and restoration projects that are funded and implemented by local watershed groups will potentially lead to improvements in coastal water quality.

Goal 3 Research, Education, and Technology Development: This proposal will facilitate research and education by providing continuing funding for Regional Coordinators who are currently organizing and holding funding workshops, networking forums, and capacity building activities in coastal areas.

Goal 4 Jurisdiction and Ownership: This proposal is intended to increase the already existing coordination between the Resources Agency's departments, other State and federal agencies, universities and local groups/landowners involved in watershed management. This coordination will eliminate duplicative efforts and is in the best interest of cooperative and consistent watershed management.

Project Budget:

· Three Regional Watershed Coordinators $ 180,000

Project Schedule:

CIAP funding would permit FSOS Regional Watershed Coordinators to continue and expand their work through the year 2002.

CALIFORNIA RESOURCES AGENCY
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PROJECT PROPOSAL FORM

Department:	**Department of Parks and Recreation, Channel Coast District**
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Title of project:	**Gaviota Creek Watershed Management Plan/Coordinated Resource Management Plan**
Project location:	**Santa Barbara County**
Total cost:	**$100,000**
Funding request:	**$100,000**

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Project Summary:

PROBLEM STATEMENT
Gaviota Creek is one of the largest sediment sources into the Santa Barbara Channel. It drains approximately 20 square miles of the western end of the Transverse Range in southwestern Santa Barbara County. Gaviota Creek remains in a natural condition; however, there are a number of problems that threaten to degrade aquatic habitats, alter natural stream geomorphic processes, impact natural migration of sensitive wildlife, and damage wetland vegetation.

Aerial photographs after storms in 1998 show a plume of sediment from Gaviota Creek that measured approximately 20 miles into the Santa Barbara Channel. Mitchell Swanson Hydrology and Geomorphology (June 1999) prepared a cursory examination of the watershed and documented some of the degraded features of the watershed. Swanson found that increased sedimentation is pervasive throughout the watershed, and threatens to degrade water quality, habitat values, and physical stream processes. CDPR has documented steelhead trout migration barriers in the lower three miles of the watershed. Additionally, over the past two years of monitoring, CDPR has documented instances of higher than normal water temperature, increased algal growth, and lower than normal dissolved oxygen levels in the lower three miles of the watershed.

Land use practices throughout the watershed are a significant source of the existing water quality and habitat degradation. To date, there has not been any planning to address water quality in the Gaviota Creek watershed. The proposed project offers an opportunity to improve marine ecosystems and ocean water quality by addressing siltation and water quality degradation on Gaviota Creek.

CDPR proposes to implement a Watershed Management Plan/Coordinated Resource Management Plan (WMP) on Gaviota Creek. The proposed WMP will provide a forum for all property owners to work cooperatively in addressing surface water and habitat degradation in Gaviota Creek. The WMP will provide an action plan to address the root causes of surface water degradation in Gaviota Creek. The proposed WMP is consistent with and complements existing efforts by the Central Coast Regional Water Quality Control Board (RWQCB) to address non-point sources of pollution in surface waters. The proposed effort stresses voluntary implementation of Best Management Practices to reduce non-point source pollution, consistent with the Statewide Non-Point Source Pollution Control Program. The RWQCB is working with CDPR to secure funds for the proposed WMP.

CDPR proposes to partner with the Cachuma Resource Conservation District (CRCD), the RWQCB, and neighboring property owners to implement this WMP.

SETTING
Gaviota Creek drains approximately 20 square miles of the western end of the Transverse Range in southwestern Santa Barbara County. Gaviota Creek drains into the Santa Barbara Channel. The watershed extends 6.5 miles inland and reaches elevations of 1,800 feet above Mean Sea Level. CDPR, CalTrans, and the United States Forest Service own and manage approximately one-third of the watershed. The remaining two-thirds of the watershed is

privately owned and managed as rangeland. Surface flow within the creek is typical of many steep coastal drainages in southern California, with highly variable surface flow between periods of winter storms and the summer drought. Flows range from 0.0 cfs in summer and fall to a peak estimated discharge of between 6,000 and 7,000 cfs in February 1998 (Swanson 1998).

HABITAT VALUES

Gaviota Creek provides habitat for a number of rare, threatened and endangered aquatic species including the California red-legged frog (Federal threatened), two-striped garter snake (Species of Concern [SC]), tidewater goby (Federal endangered), southwestern pond turtle (SC), and arroyo chub (SC). In addition, Gaviota Creek supports an active steelhead trout (Federal Endangered) run. A recent survey of the lower 3 miles of the main stem of Gaviota Creek found 8 steelhead trout individuals (Glick November 2000).

WATERSHED MANAGEMENT PLAN/COORDINATED RESOURCE MANAGEMENT PLAN PROCESS

CDPR has identified four phases for implementing a WMP on Gaviota Creek. (See attached flowchart).

- The first phase of the WMP involves identifying critical elements in the watershed (for example: sediment, sensitive taxa, soils, slopes, etc.), compiling existing information on all watershed elements, and identifying gaps in knowledge about watershed features. Some of the data gaps that CDPR has identified for the watershed include stream channel stability, sediment sources and a sediment budget, sources of water quality impairment, and surface and sub-surface hydrology.
- The second phase includes a facilitated stakeholder group that will prepare a WMP through a process of establishing baseline data; establishing goals and objectives; identifying problems; determining desired conditions; developing restoration, management, and monitoring activities; determining measures of success; and identifying funding sources. Ultimately, the stakeholder group will determine the final elements to be addressed in the WMP based on the specific needs of the watershed and the interests of the land managers.
- The third phase involves implementing the recommendations of the WMP; and,
- The fourth phase involves monitoring the results of the management recommendations.

Funding Proposal:

PHASE I $100,000

CDPR seeks funds to complete various steps in this Phase I planning stage of the WMP. Once Phase I is complete, land managers in the watershed will have a comprehensive database of all existing information on important watershed attributes. This database will guide management decisions in the watershed and focus attention, action, and planning on critical areas. This database will guide future monitoring activities in the watershed.

STEP 1A -- ***Compile and Analyze Data on State Park Lands***

Prepare a report that compiles and analyzes existing information about critical watershed elements on **State Park lands**. This report will summarize existing data, provide complete bibliographic information of relevant studies, analyze existing information for quality and relevance, and identify areas where further study is necessary. The information from this report will help identify problems on the watershed, establish baseline data, and focus additional research on critical areas. Additionally, this work will include preparing a report based on a comprehensive assessment of all roads, trails and other erosional features on Gaviota State Park. This report will provide a prioritized list of erosion control projects for all State Park lands.

Step 1A includes a contract for compiling existing data on Gaviota State Park, a contract to assess erosional features in Gaviota State Park, and funds for project management and oversight.

BUDGET -- $30,450 (Total cost is $38,950, with CDPR contributing $8,500)

STEP 1B -- ***Compile and Analyze Data Throughout the Watershed***

Prepare a report that compiles and analyzes existing information about critical watershed elements **throughout the entire watershed**. This report will summarize existing data, provide copies or complete bibliographic information of relevant studies, analyze existing information for quality and relevance, and identify areas where further study is necessary. The information from this report will help identify problems on the watershed, establish baseline data, and focus additional research on critical areas.

Step 1B includes a contract for compiling and analyzing existing data throughout the watershed and funds for project management and oversight.

BUDGET -- $16,750

STEP 2 -- ***Create a Spatial Database to Manage Existing and Future Data***.

Develop a spatial database (GIS or other format), enter all existing information into the database, and prepare maps and queries of the data. A GIS database is essential to manage existing and future data that will result from this WMP. This database will allow land managers in the watershed to examine multiple layers of data on watershed features and identify water quality problems, causes and possible solutions. This database will be accessible to agencies, property owners, the research community, and other parties interested in understanding the Gaviota Creek watershed.

Step 2 includes funds for a contractor to develop the database, production of maps and queries from this database, and project management and oversight.

BUDGET -- $46,500

CONTRACT ADMINISTRATION

This proposal includes costs for staff to prepare contract documents, administer contracts, and track budgets.

BUDGET $6,300

Consistency with the Mission and Goals:

The proposed Gaviota Creek Watershed Management Plan/Coordinated Resource Management Plan will provide for coordinated management and enhancement of coastal resources and ecosystems. The proposed WMP is consistent with the Mission and Stewardship goals of the CIAP. The WMP will allow landowners to collaboratively assess, conserve, manage and enhance coastal ecosystems and resources. The proposed WMP will provide direct surface water quality benefits to marine and terrestrial ecosystems through the identification of specific actions for best management practices that are designed to reduce sedimentation and improve overall water quality within the Creek thereby improving impacts as the Creek enters coastal waters. The project is consistent with existing efforts by the RWQCB and other agencies.

Timeline:

Formal Notice of Project Award	0 Weeks
Contract Between CIAP and CDPR	4 Weeks
Notice to Begin Work at District Level	5 Weeks
Develop RFP's for Watershed Reconnaissance and Mapping	5 Weeks - 15 Weeks
Bid Advertising	16 Weeks - 20 Weeks
Bid Award and Contract Processing	22 Weeks - 26 Weeks
Draft Database and Maps	42 Weeks
Final Database and Maps	48 Weeks

Budget:

Item	Unit	Unit Cost	Extended	Total
STEP 1A -- Compile and Analyze Data on State Park Lands				$30,450
Contract for Services (Compile Existing Information)	1	$8,500	$8,500	** CDPR Match
Contract for Services (Compile Existing Information)	1	$8,000	$8,000	
Contract for Services (Gaviota State Park Erosion Assessment)	1	$20,000	$20,000	
Project Management	70	$35/Hour	$2,450	
Total			***$30,450***	
STEP 1B -- Compile and Analyze Data Throughout the Watershed				$16,750
Contract for Services	1	$15,000	$15,000	
Project Management	50	$35/Hour	$1,750	
Total			***$ 16,750***	
STEP 2 -- Create a Spatial Database to Manage Existing and Future Data.				$46,500
Contract For Services	1	$43,000	$43,000	
Project Management	100	$35/Hour	$3,500	
Total			***$ 46,500***	
CONTRACT ADMINISTRATION				$6,300
Contract Management	275	$23/Hour	$6,300	
TOTAL REQUESTED				**$100,000**

CALIFORNIA RESOURCES AGENCY
COASTAL IMPACT ASSISTANCE PROGRAM
PROJECT PROPOSAL FORM

Department: Resources Agency
Prepared by: Cathy Bleier
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Title of project: North Coast Watershed Assessment Program – Phase II
Project location: California North Coast
Total cost: $450,000
Funding request: $450,000

MISSION

To ensure comprehensive and coordinated management, conservation and enhancement of California's ocean and coastal resources for their intrinsic value and for the benefit of current and future generations.

GOALS: Four goals have been established by the State of California to achieve this mission.

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Goal 4: Jurisdiction and Ownership. To maximize California's interests in coastal watersheds, State Tidelands, the Territorial Sea, and the Exclusive Economic Zone.

Project Summary:

This project would help ensure that watershed assessments initiated this fiscal year in six coastal watersheds will be used for watershed protection planning, management, and restoration. It will accomplish this by filling outstanding critical information gaps, establishing monitoring projects where needed, and helping local groups maintain and use NCWAP products for restoration project prioritization, design, and adaptive management.

Background

A North Coast Watershed Assessment Program was established this year as part of a broader eight-point Coastal Salmon and Watersheds strategy to increase salmon recovery efforts. It is an interagency program, consisting of five departments, which is designed to assess watershed conditions for all watersheds with private or state ownership in the North Coast Hydrologic Region over a 7 year period. The Agency considers assessment to the first of a five step restoration process that also includes planning, implementation, monitoring, adaptive management, and outreach and education. These steps are critical to developing cost-effective strategies to protect our best watersheds and restore the rest.

The North Coast Watershed Assessment Program (NCWAP) will: 1) describe watershed conditions, processes, and land uses; 2) provide hypotheses about linkages among these factors and their effect on habitat conditions for salmonids; and 3) develop recommendations for protecting and restoring watersheds. NCWAP was funded to compile, digitize and analyze existing information from multiple agencies, landowners, and stakeholder groups and to conduct field data collection at a relatively coarse scale, for the most part, over the course of one calendar year.

NCWAP will produce very valuable watershed-level information for many watersheds and will also provide products that small landowners or watershed groups need for planning and cumulative effects analysis but could not otherwise afford, such as geology and erosion maps and timber harvest maps. However, more intensive or multi-year data collection or monitoring may be needed to reach acceptable levels of certainty about a particular factor potentially limiting fish and to gain community support for addressing that variable. This is particularly true for instream parameters such as temperature, streamflow, and fish population. Although NCWAP was not funded to monitor fish populations, population data will be critical to agency and landowner efforts to evaluate restoration and regulatory actions.

Proposed Actions

This project will be used to fund follow-up activities by watershed groups, local agencies, landowners or other stakeholder groups that are consistent with watershed assessment data gaps, findings, or recommendations. These may include but are not limited to support for activities such as:

- More focused assessment on multi-ownership watershed parameters, such as rural subdivision road assessments

- Developing or implementing locally based plans to monitor specific watershed variables, consistent with NCWAP findings or hypotheses about potential limiting factors, such as temperature, fish presence/absence
- Training or setting up a community-based capacity for using data and models developed by NCWAP, such as riparian recruitment, road erosion, and limiting factors Ecosystem Management Decision Support models
- Developing plans to implement priority restoration needs; identifying potential projects and actions that contribute to recovery; and clarifying funding options or other types of incentives
- Additional fieldwork to design specific projects to implement high priority restoration, protection, and recovery actions.

Budget:

This budget identifies the types of projects follow-up that we will do, depending on the level of local organization of watershed or stakeholder groups, RCD activity, or other mechanisms for implementing these in the watershed. Other activities may be substituted for fieldwork, such as rural subdivision roads assessments (up to $50K) or other concerns or data needs identified in the NCWAP assessment.

Fieldwork:	***Basins***	***PWS***		***% PWS requiring fieldwork***	***Hours***		***Hourly costs***		***Total***	
Instream	6	30	**	0.25	80	*	$65.00	***	$219,000	****
Planning:	6									
Professional	6				500		$75.00		$ 210,000	
Production	6				100		$20.00		$ 12,000	
Training/support for local use of NCWAP products										
	6				60		$25.00		$ 9,000	
Total									$ 480,000	

*	Based on estimates for temperature and fish surveys
**	Based on estimate of 80 planning watersheds per basin from NCWAP BCP for year 1
***	Estimate of 500 hrs professional time @ $75 + 100 hrs support staff @$25
****	May substitute uplsope work, e.g. road assmts @ $39K/basin x 6 basins = $234,000

Consistency with Mission and Goals:

This proposal is consistent with two of the four goals:

- It promotes stewardship for north coast watershed resources by : 1) increasing the quality and credibility of assessments in north coast California watersheds which are needed to guide management, conservation and restoration; 2) promoting local "ownership" of information, monitoring activities, and analytical tools that will assist landowners, watershed groups, and other local stakeholders in planning, implementation, and adaptive management to protect watershed resources; and 3) directly assisting in the development of watershed-level plans to protect, restore or preserve critical habitats and resources.
- It will advance research, education, and technology by 1) raising the awareness of local landowners and stakeholders in coastal watersheds through hands-on assessment activities; 2) test and apply various GIS-based modeling tools for analyzing or predicting riparian vegetation and habitat impacts, erosion potential and sedimentation, and limiting factors to listed anadromous fish recovery.

Project Timeline:

Contracts will be implemented in FY 2001/2002 but may last up to 3 years for full implementation.

CALIFORNIA RESOURCES AGENCY
COASTAL IMPACT ASSISTANCE PROGRAM
PROJECT PROPOSAL FORM

Department:	**Department of Parks and Recreation, Silverado District**
Prepared by:	**Margaret Baumgratz and Marla Hastings**
Phone number:	**(707) 939-6185**
Address:	**20 East Spain Street Sonoma, CA 95476**
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Title of project:	**Sonoma and Santa Rosa Creeks Watershed Management Plans**
Project location:	**Sonoma County - Sonoma Creek watershed; headwaters and tributaries in Sugarloaf Ridge and Annadel State Parks, and tributaries in Jack London State Historic Park**
Total cost:	**$100,000**
Funding request:	**$100,000**

MISSION

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Goal 4: Jurisdiction and Ownership. To maximize California's interests in coastal watersheds, State Tidelands, the Territorial Sea, and the Exclusive Economic Zone.

Summary of the Project:

The proposed project is to prepare comprehensive watershed management plans for the sub-watersheds within three DPR units. The plans will propose strategies and actions to control surface water runoff and sedimentation into stream courses. These natural processes are accelerated by disturbances caused by past land management practices prior to park acquisition, including road building, timber harvesting, rock quarrying and agriculture. Since acquisition, the increase of "volunteer" trails and associated recreational use has increased sedimentation. Accelerated sedimentation from eroding soils continues to aggravate stream bank instability, causing additional erosion and sedimentation. Significant native plant cover has been lost, fisheries habitat has been degraded, and archaeological sites have been negatively impacted.

Sugarloaf Ridge State Park and Jack London State Historic Park have headwater streams feeding Sonoma Creek and out to the San Pablo Bay. Annadel State Park has tributaries flowing to Santa Rosa Creek to the Russian River which enters the Pacific Ocean on the North Coast near Jenner. Both of these watersheds have gained attention in recent years due to a drop in water quantity and quality, and associated decrease in anadromous fish populations.

This project will integrate each of the ecological concerns into a comprehensive approach for a watershed-level solution based on sub-watershed level assessment. Restoration strategies coordinated and compatible with the entire Sonoma Creek watershed will be assessed. DPR will plan for watershed improvements through forming partnerships and alliances with the Southern Sonoma County Resource Conservation District and the Sonoma Ecology Center. It is through these partnerships that DPR will encourage volunteer support and citizen involvement, which will include an educational component at the watershed level.

Without the comprehensive planning effort for these headwater sub-watersheds, an important component of watershed restoration will be missing. The region will continue to suffer from degraded wetlands and low value habitat for anadromous fisheries. DPR suffers from intense pressure to maintain degraded access roads while providing for public access onto DPR lands. A full evaluation of the current road systems and trail corridors is essential as well as investigation of alternative transportation corridors (both road and trail) that would decrease sedimentation.

Consistency with the Mission of the CIAP:

This project fosters stewardship of public lands as we assess, conserve, and manage significant ecosystems. The Sonoma Valley's three State Parks hold the headwaters to the Sonoma Creek and Santa Rosa Creek Watersheds. Through other grant funding sources, such as 319h (RWQCB) the department has accomplished meaningful water quality improvements in the State Parks by addressing the highest priority projects. The most significant 319(h) project is currently being undertaken at Annadel State Park, where over three miles of degraded roadway is being decommissioned during summer, 2001. This is a segment of a continuing project in Annadel where l8 miles of roadway have been fully recontoured and topographically restored since l998. These individual projects, though

effective in restoring much of the stream riparian corridor, improving fish passage, spawning beds and fish rearing habitat, and reducing sediment-source contributions in the subwatershed, are not tied to an overall comprehensive conservation plan. Implementation projects are not possible within Sugarloaf Ridge and Jack London State Historic Park until comprehensive planning has been accomplished.

The scope of future work will be improved by a watershed management plan prepared in collaboration with other stakeholders. The proposed project will complement the previous efforts by assessing and planning more detailed and comprehensive corrective measures within the subwatershed context, which will lead to the accomplishment of coastal resource management goals for this park unit. Without a comprehensive planning effort for this subwatershed, an important component of watershed restoration will be missing from the overall watershed health. The region will continue to suffer from degraded coastal resources and low value habitat for anadromous fisheries.

This proposed project conforms with statewide policies and initiatives addressing coastal resource management and watershed protection and restoration goals. The proposed project involves multiple agencies and watershed stakeholders in planning and decision-making. Some of these cooperating agencies are; California Department of Fish and Game (Bill Cox), State Water Resources Control Board, San Francisco Bay Regional Water Quality Control Board (RWQCB) (Carmen Fewless), Southern Sonoma County Resource Conservation District (David Luther), and National Marine Fisheries Service (Rick Wantuck). The initiatives of these stakeholders facilitate local, collaborative planning efforts to accomplish coastal resource and water quality goals by encouraging participation in ways that look to solutions of mutual benefit to those affected by watershed management decisions.

This project fosters research, education and technology through educational programs, and technology developments. The department will continue to plan for watershed improvements in its park units through forming partnerships and alliances, and by encouraging volunteer support and citizen involvement including an educational component. An element of the education component will involve the K-12 Adopt a Watershed Program conducted through local schools and supported by the proposed project proponents and collaborators. Adopt a Watershed is an increasingly popular and now well- established program in California that uses a local watershed as the focal point of a science curriculum.

Adopt a Watershed promotes stewardship toward the land through classroom activities, field studies, restoration projects, professional speakers and community outreach programs. Through these activities, students are provided with skills to make educated, informed decisions regarding wise resource management.

All stakeholders will be invited to attend public meetings where objectives of watershed plan and concerns will be addressed. DPR will make consistent and continuous efforts to involve stakeholders in the watershed plan process.

Schedule of Work:

Many of the activities proposed in this application operate on an ongoing schedule or have schedules dependent on our collaborators. The table below outlines the schedule for those tasks that are constrained by season.

	Spring	**Summer**	**Fall**	**Winter**
2001			Contract signed (assumed)	AAW
2002	BMI training, BMI sampling, WQ sampling, AAW	BMI ID PR Planning	BMI sampling, WQ sampling, AAW	peak flow sampling, TSS sampling, AAW
2003	BMI sampling, WQ sampling, AAW	BMI ID PR Planning	BMI sampling, WQ sampling, AAW	peak flow sampling, TSS sampling, AAW.
2004	BMI sampling, WQ sampling, AAW	BMI ID PR Planning	Final reporting	

Cost Estimate and Budget:

Nearly all work included in this proposal would be contracted out to partners in this project. Three years of project oversight and administration would be conducted by DPR, but all technical work would be undertaken by experienced experts in this field.

Upon grant award, a detailed cost breakdown and timeline would be requested of contractors.

2000: $10,000: AAW
2001: $30,000: BMI and all water sampling, AAW, Initiation of public process with stakeholders and implementing recommendations.
2002: $30,000: BMI and all water sampling, AAW. Continuation of public process.
2003: $10,000: Final sampling and reporting.
DPR retained funds for project oversight, administration, public outreach planning and coordination: $20,000

Total Project Budget: $100,000

CALIFORNIA RESOURCES AGENCY
COASTAL IMPACT ASSISTANCE PROGRAM
PROJECT PROPOSAL FORM

Department:	**Coastal Commission, Gulf of the Farallones National Marine Sanctuary**
Prepared by:	**Natalie Cosentino-Manning**
Phone number:	**415-561-6622**
Address:	**Gulf of the Farallones National Marine Sanctuary Building 201, Fort Mason San Francisco, CA 94123**
E-mail:	**natalie.cosentino@noaa.gov**
Title of project:	**Tomales Bay High School Student Water Quality Monitoring**
Project location:	**Tomales Bay, Marin County**
Total cost:	**$101,000**
Funding request:	**$50,000**

MISSION

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Introduction:

Two sentence summary of the project:
The California Coastal Commission (CCC) in conjunction with Gulf of the Farallones National Marine Sanctuary (GFNMS) will develop and implement a high school student water quality monitoring project for Tomales Bay that would monitor temperature, pH, salinity, conductivity, turbidity and dissolved oxygen; create water quality data that can serve as a baseline for federal, state, and regional water agencies; and to provide students a sense of ownership by taking a key role in the watershed management process by supplying valuable information.

Brief description of Tomales Bay:
Tomales Bay is located in Marin County, California, approximately 40 miles north of San Francisco and 15 miles south of the Russian River. It opens at the southern end of Bodega Bay and extends southeast. The drainage areas of Tomales Bay are 223 square miles. Land use on the water shed is chiefly livestock grazing and dairy farming with scattered forested area along the creek valleys and along the western shore of the southern portion of Tomales Bay. There are nine, small, unincorporated towns in the watershed area: Tomales, Inverness, Nicasio, Olema, Point Reyes Station, Woodacre, San Geronimo, Forest Knolls, and Lagunitas. Population in these towns ranges from about 1,000 to 5,000 persons.

Tomales Bay is exceptionally rich in flora and fauna. Virtually all-major types of marine and estuarine habitats occur in or near the Bay, including exposed and protected rocky shorelines, sandy beaches, extensive mud, sand, and eel grass flats, and Salicornia marshes. The Bay supports diverse populations of fish, invertebrates, and algae. It also supports a harbor seal colony and an abundant and varied bird population.

Tomales Bay is the spawning ground for several economically and biologically important fishes and invertebrates. Millions of herring enter the Bay to spawn each year and are important food items for sea lions, harbor seals, and larger fish and birds. The Bay also serves as critical habitat for anadromous fish, and flatfish. Commercial oyster beds support a viable source of employment for the area, and tourism depends largely on the health of the Tomales Bay ecosystem.

The need to study
Monitoring of water quality parameters provides valuable information about the ecological status of marine and freshwater systems. Fishermen, oyster farmers, those who use Tomales Bay for recreation or depend upon it for their livelihood, are affected by fluctuations in factors such as salinity, temperature, turbidity, nutrients, and bacteria levels. Bacterial contamination, and algal blooms remain seasonably high and continue to hamper oyster farming. Recently, state and federal agencies have shown renewed interest in the Bay and it's resources. This interest ranges from public health issues involving aquaculture operations (i.e., commercial oyster farming), to overall management concerns and long-range planning of watershed developments.

How can students help
Local high school students will conduct monthly tests for water quality parameters. They will sample in spring, summer, after the first big runoff event in autumn and in winter. The students

using simple testing equipment will measure all temperature, pH, salinity, conductivity, turbidity and dissolved oxygen in the field. The data collected can then be entered into a spreadsheet and distributed to coordinating agencies.

Project Summary:

Gulf of the Farallones National Marine Sanctuary (GFNMS) will administer the student water quality project. This plan would incorporate partners such as Point Reyes National Seashore (PRNS), Golden Gate National recreation Area (GGNRA), Tomales Bay Watershed Council, California Department of Environmental Health Services (DHS), Environmental Protection Agency (EPA), and the Regional Water Quality Control Board (RWQCB) that have concerns over water quality in Tomales Bay and in the education of the public, especially the youth.

The Tomales Bay High School Student Water Quality Monitoring Program would educate local high school students on data collection activities aimed at understanding, protecting and improving the physical, chemical and biological conditions in Tomales Bay while providing valuable information. Gulf of the Farallones National Marine Sanctuary will provide the coordination, training, equipment, and manuals for the program

Consistency with the Mission and Goals:

The Tomales Bay High School Student Water Quality Monitoring will involve the coordination between different agencies and develop a unique experience for local high school students. The program will educate, and foster a sense stewardship on the biologically diverse and economically important Tomales Bay.

Stewardship
The Tomales Bay High School Student Water Quality Monitoring will provides the students a collaborative approach to water-related environmental education, build awareness of pollution problems, become trained in pollution prevention, and create skills in environmental stewardship.

Economic Sustainability
The Tomales Bay High School Student Water Quality Monitoring will provide information to federal, state, and local water agencies on changing water quality conditions that may negatively impact the oyster and herring fisheries.

Research, Education, and Technology

Through the monitoring process, the students gain an appreciation for the scientific method, exposure to facts about their local watershed, and an opportunity for hands-on learning The data collected from the Tomales Bay High School Student Water Quality Monitoring Program can provide important base-line information to Point Reyes National Seashore (PRNS), Golden Gate National Recreation Area (GGNRA), Tomales Bay Watershed Council, California Department of Environmental Health Services (DHS), Environmental Protection Agency (EPA),

and the Regional Water Quality Control Board (RWQCB). Students learn about water quality, estuarine and bay systems, and local flora and fauna. The program will also provide the student skills in real scientific data collection by a using YSI 85 meter and other water quality equipment. The students will also learn how to read the data gathered and distribute to relevant agencies.

Budget, Cost Estimate, and Timeline:

TASK	TIMELINE	CIAP GRANT	OTHER FUNDS
1. Contractor	1/02-12/05	$30,000	$41,000
2. Meet with other agencies	Ongoing		
3. Identify schools	1/02-3/02		
4. Inventory and purchase equipment	2/02-5/02	8,000	
5. Boat costs		7,000	10,000
6. Produce Education manual	6/02-11/02	5,000	
7. Distribute manual to schools	12/02-1/03		
8. Take students to Tomales to practice techniques	1/03- 12/05		
9. Accumulate data	1/03-12/05*		
TOTAL		**$50,000**	**$51,000**

*Future funding through other sources would allow for integration of data into web sites.

CALIFORNIA RESOURCES AGENCY
COASTAL IMPACT ASSISTANCE PROGRAM
PROJECT PROPOSAL FORM

Department: Resources Agency
Prepared by: Renée Hoyos, Special Assistant Watersheds and Outreach
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Title of project: Tools for Watershed Management
Project location: Entire State of California
Total cost: $700,000
Funding request: $700,000

MISSION

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Project Summary:

There are over 150 active watershed partnerships in California working to protect, restore and manage watershed health for a variety of reasons including: protecting drinking water, floodplain management, protecting beaches, restoring native salmon and steelhead fisheries, and cleaning up polluted urban streams. Most of these partnerships are community-based. They were not created by state government agencies, but rather consist of interested landowners, local government officials, businesses, and community activists that have a direct and vital interest in the health of their watersheds. These community-led efforts have become an integral and necessary part of accomplishing the State's goals of clean water, safe beaches, and restored native fisheries.

Unlike some other states, California does not have a coordinated set of State programs to assist these community efforts and to ensure their effectiveness. To date watershed groups often operate independently of each other and state agencies. In order to do the simplest projects, they must reinvent the wheel of watershed assessment, planning and management for each watershed. Frequently, watershed practitioners are requested to satisfy requirements of the different State agencies and departments without creating an integrated plan that would serve multiple purposes. State agencies and departments, similarly, develop guidance for their individual programs, but do not have resources to evaluate how their programs fit with similar programs of other departments.

The need to create a set of ***Tools for Watershed Management*** has been identified by staff from multiple departments and from local practitioners of watershed management. The goal is to assist local groups in accessing sound technical assistance, providing a tool set that serves as guidance on watershed issues to watershed managers and the public. The outcome is a more educated watershed manager, a better project and ultimately improved resources.

This effort to develop a set of consistent watershed tools will not constitute a new program, but will focus on coordinating existing programs to make the state's programs easier to use from a local watershed practitioner perspective. The Resources Agency proposes to develop these tools through the ***California Biodiversity Council's Watershed Workgroup (CBC WWG)***. This work group consists of watershed program managers from all the major state and federal agencies with natural resources and water quality management responsibility. We have already begun this effort and have several products underway. A dedicated source of funding is needed to ensure products are completed in a timely manner.

This effort will also be informed and guided by the ***Joint Task Force on California Watershed Management*** headed by the Resources Agency and the State Water Resources Control Board. This new task force is formed under a new state law AB 2117 (Wayne). This group will be conducting an evaluation of ten watershed projects around the state to look at agency involvement in watershed management and to make a set of recommendations for potential legislation that will affect watershed management in the State. The result of this effort will be a report presented to the legislature on February 1, 2002. These ongoing efforts will be used to help create the tool set for watershed management. We plan to build on existing programs and practices before creating new ones.

By unifying watershed management throughout the state, coastal resources will be served. This set of tools is especially needed for coastal watersheds because of the lack of extension of CalFed funding to the Coast. Ultimately, these tools will benefit all watersheds in the state regardless of their geographic location.

Watershed management tools: The goal is to provide a tool set to assist local watershed groups and landowners with their watershed restoration projects. These tools will assist groups in planning and tracking the success of their projects and provide support for maintaining their projects into the future.

- ***Watershed Agenda:*** This agenda will provide the framework for unifying watershed management throughout the state. It will outline the watershed programs that are currently underway and announce upcoming programs. This document will also be used to educate the public about the watershed activities in the State. This document will outline the goals for the watershed program and guide the development of a watershed management tool set.
- ***Statewide Watershed Planning Handbook Suite***: This suite of tools will contain handbooks on watershed assessment, planning, implementation and monitoring for local watershed groups and landowners that perform restoration projects. These handbooks will provide an overall framework for watershed project planning that draws upon the work of State, federal and local efforts.
- ***Databases and Libraries:*** These databases and libraries will provide a repository for data for restoration projects, contain a GIS interface so that data can be displayed geographically and provide information on funding programs. These databases exist or will be available in the next year. Upkeep and maintenance is essential to provide up-to-date information as the legislature requests it.
- Create, maintain and update a funding database that will serve as a one-stop shopping site for all issues related to finding, applying for and attaining watershed funding.
- Encourage coordinated, multi-agency and multi-institution approaches to watershed management by increasing the exposure of the Natural Resources Project Inventory (NRPI). This database is searchable by habitat, species, county and agency sponsor. Our program seeks overhaul this database to incorporate more robust monitoring outcome data similar to the database used by the Oregon Plan.
- Assist in the development of a referenced library to contain watershed restoration documents.
- Create a web page to display these tools. The web page would serve as a service center for local groups, landowners, state and federal agencies to locate information, provide educational opportunities, links to other programs, on-line discussions groups and other pertinent data relevant to watershed group's needs.
- ***Technical Assistance:*** We intend to assist watershed groups with direct funding or assisting groups to find other sources of funding for their watershed coordinators. This technical assistance can also be in the form of providing workshops for grant writing, facilitation, field techniques and project management.

These tools will provide support, services and advocacy to California's watershed partnerships and to landowners. In order to provide this support, we need to assemble the resources already available before creating new ones. In this manner, we intend to draw upon the

collective knowledge of those in the field that perform on-the-ground restoration, agency staff and the academic community to enhance existing resources and to engage the legislature by advancing watershed issue legislation.

Implementation of the tool set:
The plan for implementation of the tools set involves collaboration with all the resource agencies and departments primarily through the (CBC WWG). This workgroup's membership includes federal and State resource agency staff, and local watershed, university, non-profit and environmental group members.

Key Challenges.
The key challenges of creating such a tool set are largely geographic in nature. Because California is so diverse, we plan to be sensitive to the need to create a flexible framework rather than one prescribed approach. We understand that there is no 'one-size-fits-all' tool set for California's watersheds. Another challenge to overcome is assisting departments and other agencies in working together better and more often in watershed management projects. We will be looking at mechanisms for improved collaboration through the Joint Task Force on California Watershed Management.

Consistency with Mission and Goals:

Mission: The creation of a statewide tool set is consistent with the mission of Coastal Impact Assistance Program in that in order to have coordinated and consistent watershed management in California, the tools that we have described must be readily available to the public. We plan to do this by providing an extensive web page that contains the tools necessary to assess, plan, implement and monitor watershed projects throughout the state. Better planning and management will ultimately result in better conservation and enhancement of California's resources for present and future generations.

Goal 1 Stewardship: This proposal addresses stewardship of ocean and coastal resources by seeking to arm watershed managers with planning and assessment guidance that they need for effective management. This approach will help ensure the most effective and efficient approaches are used to develop the most valid management plan for watershed management purposes.

Goal 2 Economic Sustainability: The document California's Ocean Resources: An Agenda for the Future states that ocean dependent industries contributed $17 billion to the state economy in 1992, creating over 370,000 jobs that year. That economy is largely based on the existence of clean coastal waters for swimming, healthy marine resources, sustainable fisheries, and the existence of beaches that are safe from erosion. This proposal requests funding that will enable the State to track the status of watershed programs on the coast and throughout the state, to make recommendations on future directions of watershed management. It will allow landowners and manager's to participate in restoration activities that will ultimately benefit the economy of California.

Goal 3 Research, Education, and Technology Development: This proposal will facilitate research and education by providing a location to post data, conference dates, workshops and to increase networking between watershed groups. The NRPI and Chico databases will contain data from the watershed projects in the state, provide historical data to give an statewide perspective to the state of watershed management past, present and future and contain all funding sources pertinent to watershed restoration.

Goal 4 Jurisdiction and Ownership: This proposal is intended to increase the already existing coordination between the Resources Agency's departments, other State and federal agencies, universities and local groups/landowners involved in watershed management. This coordination will eliminate duplicative efforts and is in the best interest of cooperative and consistent watershed management.

Project Budget:

· Watershed Agenda	$ 50,000
· Statewide planning and assessment handbooks	$ 200,000
· Databases & Libraries	$ 300,000
· Technical Assistance	$ 150,000
	$ 700,000

Project Timeline:

	Year of Completion
Watershed Agenda	2001
Watershed Handbook Suite	2002
Databases and Libraries	2003
Technical Assistance	2003

Agencies Involved in the CBC WWG

State Resource Agencies, Departments and Commissions
Resources Agency
Department of Fish and Game
California Department of Fire and Forestry
Department of Conservation
Department of Water Resources
Department of Parks and Recreation
California Conservation Corps
State Coastal Commission
State Lands Commission
State Water Resources Control Board
Regional Water Quality Control Boards I - IV

Federal Agencies
Bureau of Reclamation
Bureau of Land Management
Department of Food and Agriculture
Monterey Bay National Marine Sanctuary
National Marine Fisheries Service
National Park Service
Natural Resources Conservation Service, USDA
US. EPA
US. Forest Service
US. Fish and Wildlife Service
US. Geological Survey and Biological Resources
US Marine Corps

Universities
UC Berkeley
CSU Chico
UC Davis

Local/ Non-profit Groups
California Association of Resource Conservation Districts
CalTrout
Coastal Watershed Council
CRMP
San Francisco Conservation and Development Commission
North Coastal California Counties Association
Northern California Counties Association
Regional Council of Rural Counties
Sacramento-Mother Lode Regional Association of California Counties
San Diego Association of Governments
San Joaquin Valley Regional Association of California Counties
South Coast Regional Association of Counties
Southern California Association of Governments
Sonoma Ecology Center
SCWA
SRWP

Private Groups
Jones & Stokes, Inc.
PP&P